## SEQUENCE LISTING

<110> BRONNER, CHRISTIAN
 HOPFNER, RAPHAEL
 MOUSLI, MARC
 JELTSCH, JEAN-MARC
 LUTZ, YVES
 OUDET, PIERRE

<120> ICBP90 POLYPEPTIDE AND ITS FRAGMENTS AND POLYNUCLEOTIDES CODING FOR SAID POLYPEPTIDES AND APPLICATIONS FOR DIAGNOSING AND TREATING CANCER

<130> 065691/0266

<140> 10/019,071

<141> 2001-12-26

<150> FR 99 07935

<151> 1999-06-22

<150> PCT/FR00/01747

<151> 2000-06-22

<160> 24

<170> PatentIn Ver. 2.1

<210> 1

<211> 2382

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(2379)

<400> 1

atg tgg atc cag gtt cgg acc atg gat ggg agg cag acc cac acg gtg 48
Met Trp Ile Gln Val Arg Thr Met Asp Gly Arg Gln Thr His Thr Val
1 5 10 15

gac tcg ctg tcc agg ctg acc aag gtg gag gag ctg agg cgg aag atc  $\phantom{0}$  96 Asp Ser Leu Ser Arg Leu Thr Lys Val Glu Glu Leu Arg Arg Lys Ile  $\phantom{0}$  20  $\phantom{0}$  25  $\phantom{0}$  30

cag gag ctg ttc cac gtg gag cca ggc ctg cag agg ctg ttc tac agg 144
Gln Glu Leu Phe His Val Glu Pro Gly Leu Gln Arg Leu Phe Tyr Arg
35 40 45

ggc aaa cag atg gag gac ggc cat acc ctc ttc gac tac gag gtc cgc 192 Gly Lys Gln Met Glu Asp Gly His Thr Leu Phe Asp Tyr Glu Val Arg 50 55 60

ctg aat gac acc atc cag ctc ctg gtc cgc cag agc ctc gtg ctc ccc 240 Leu Asn Asp Thr Ile Gln Leu Leu Val Arg Gln Ser Leu Val Leu Pro 65 70 75 80

	agc Ser														Gly	288
	tgc Cys															336
	gcc Ala															384
gag Glu	acg Thr 130	gaa Glu	ttg Leu	GJÀ aaa	ctg Leu	tac Tyr 135	aag Lys	gtc Val	aat Asn	gag Glu	tac Tyr 140	gtc Val	gat Asp	gct Ala	cgg Arg	432
	acg Thr															480
cgg Arg	aag Lys	gcc Ala	ccc Pro	tcc Ser 165	cgg Arg	gac Asp	gag Glu	ccc Pro	tgc Cys 170	agc Ser	tcc Ser	acg Thr	tcc Ser	agg Arg 175	ccg Pro	528
	ctg Leu															576
	aac Asn															624
cgc Arg	acc Thr 210	atc Ile	atc Ile	aag Lys	tgg Trp	cag Gln 215	gac Asp	ctg Leu	gag Glu	gtg Val	ggc Gly 220	cag Gln	gtg Val	gtc Val	atg Met	672
ctc Leu 225	aac Asn	tac Tyr	aac Asn	ccc Pro	gac Asp 230	aac Asn	ccc Pro	aag Lys	gag Glu	cgg Arg 235	ggc	ttc Phe	tgg Trp	tac Tyr	gac Asp 240	720
gcg Ala	gag Glu	atc Ile	tcc Ser	agg Arg 245	aag Lys	cgc Arg	gag Glu	acc Thr	agg Arg 250	acg Thr	gcg Ala	cgg Arg	gaa Glu	ctc Leu 255	tac Tyr	768
gcc Ala	aac Asn	gtg Val	gtg Val 260	ctg Leu	Gly 999	gat Asp	gat Asp	tct Ser 265	ctg Leu	aac Asn	gac Asp	tgt Cys	cgg Arg 270	atc Ile	atc Ile	816
	gtg Val															864
	gtt Val 290															912

tgc aag g Cys Lys A 305											960
tgc ggg g Cys Gly G	ly Arg										1008
gac atg g Asp Met A											1056
ccc agc g Pro Ser G 3			Tyr								1104
gag gtg g Glu Val V 370											1152
aag atg g Lys Met A 385											1200
atg gcc t Met Ala C	ys Val										1248
cac tac g His Tyr G	_	_			 		_				1296
cga gtc c Arg Val G 4			Ser	 _					_		1344
atc cat g Ile His G 450		_	_	 _			_	_			1392
ggc tat g Gly Tyr G 465											1440
agt ggt g Ser Gly G	ly Arg										1488
tgt gat c Cys Asp G	_				 	_	_			_	1536
ttt gct c Phe Ala P 5			Gln								1584

tcg Ser	999 Gly 530	aag Lys	ccg Pro	gtc Val	agg Arg	gtg Val 535	gtg Val	cgc Arg	aat Asn	gtc Val	aag Lys 540	ggt Gly	ggc Gly	aag Lys	aat Asn	1632
agc Ser 545	aag Lys	tac Tyr	gcc Ala	ccc Pro	gct Ala 550	gag Glu	ggc Gly	aac Asn	cgc. Arg	tac Tyr 555	gat Asp	ggc Gly	atc Ile	tac Tyr	aag Lys 560	1680
gtt Val	gtg Val	aaa Lys	tac Tyr	tgg Trp 565	ccc Pro	gag Glu	aag Lys	ggg ggg	aag Lys 570	tcc Ser	Gly 999	ttt Phe	ctc Leu	gtg Val 575	tgg Trp	1728
cgc Arg	tac Tyr	ctt Leu	ctg Leu 580	cgg Arg	agg Arg	gac Asp	gat Asp	gat Asp 585	gag Glu	cct Pro	ggc Gly	cct Pro	tgg Trp 590	acg Thr	aag Lys	1776
gag Glu	999 Gly	aag Lys 595	gac Asp	cgg Arg	atc Ile	aag Lys	aag Lys 600	ctg Leu	Gly 999	ctg Leu	acc Thr	atg Met 605	cag Gln	tat Tyr	cca Pro	1824
gaa Glu	ggc Gly 610	tac Tyr	ctg Leu	gaa Glu	gcc Ala	ctg Leu 615	gcc Ala	aac Asn	cga Arg	gag Glu	cga Arg 620	gag Glu	aag Lys	gag Glu	aac Asn	1872
agc Ser 625	aag Lys	agg Arg	gag Glu	gag Glu	gag Glu 630	gag Glu	cag Gln	cag Gln	gag Glu	999 Gly 635	ggc Gly	ttc Phe	gcg Ala	tcc Ser	ccc Pro 640	1920
agg Arg	acg Thr	ggc Gly	aag Lys	ggc Gly 645	aag Lys	tgg Trp	aag Lys	cgg Arg	aag Lys 650	tcg Ser	gca Ala	gga Gly	ggt Gly	ggc Gly 655	ccg Pro	1968
agc Ser	agg Arg	gcc Ala	999 660	tcc Ser	ccg Pro	cgc Arg	cgg Arg	aca Thr 665	tcc Ser	aag Lys	aaa Lys	acc Thr	aag Lys 670	gtg Val	gag Glu	2016
ccc Pro	tac Tyr	agt Ser 675	ctc Leu	acg Thr	gcc Ala	cag Gln	cag Gln 680	agc Ser	agc Ser	ctc Leu	atc Ile	aga Arg 685	gag Glu	gac Asp	aag Lys	2064
agc Ser	aac Asn 690	gcc Ala	aag Lys	ctg Leu	tgg Trp	aat Asn 695	gag Glu	gtc Val	ctg Leu	gcg Ala	tca Ser 700	ctc Leu	aag Lys	gac Asp	cgg Arg	2112
ccg Pro 705	gcg Ala	agc Ser	ggc Gly	agc Ser	ccg Pro 710	ttc Phe	cag Gln	ttg Leu	ttc Phe	ctg Leu 715	agt Ser	aaa Lys	gtg Val	gag Glu	gag Glu 720	2160
acg Thr	ttc Phe	cag Gln	tgt Cys ·	atc Ile 725	tgc Cys	tgt Cys	cag Gln	gag Glu	ctg Leu <sup>.</sup> 730	gtg Val	ttc Phe	cgg Arg	ccc Pro	atc Ile 735	acg Thr	2208
acc Thr	gtg Val	tgc Cys	cag Gln 740	cac His	aac Asn	gtg Val	tgc Cys	aag Lys 745	gac Asp	tgc Cys	ctg Leu	gac Asp	aga Arg 750	tcc <sup>°</sup> Ser	ttt Phe	2256

														ggc Gly		2304
_		_	_	_			_		_	_		_		aac Asn	_	2352
					ggc Gly 790				tga							2382
<210> 2 <211> 793 <212> PRT <213> Homo sapiens																
<400 Met 1		Ile	Gln	Val 5	Arg	Thr	Met	Asp	Gly 10	Arg	Gln	Thr	His	Thr 15	Val	
Asp	Ser	Leu	Ser .20	Arg	Leu	Thr	Lys	Val 25	Glu.	Glu	Leu	Arg	Arg 30	Lys	Ile	
Gln	Glu	Leu 35	Phe	His	Val	Glu	Pro 40	Gly	Leu	Gln	Arg	Leu 45	Phe	Tyr	Arg	
Gly	Lys 50	Gln	Met	Glu	Asp	Gly 55	His	Thr	Leu	Phe	Asp 60	Tyr	Glu	Val	Arg	
Leu 65	Asn	Asp	Thr	Ile	Gln 70	Leu	Leu	Val	Arg	Gln 75	Ser	Leu	Val	Leu	Pro 80	
His	Ser	Thr	Ĺys	Glu 85	Arg	Asp	Ser	Glu	Leu 90	Ser	Asp	Thr	Asp	Ser 95	_	
Cys	Cys	Leu	Gly 100	Gln	Ser	Glu	Ser	Asp 105	Lys	Ser	Ser	Thr	His 110	Gly	Glu	
Ala	Ala	Ala 115	Glu	Thr	Asp	Ser	Arg 120	Pro	Ala	Asp	Glu	Asp 125	Met	Trp	Asp	
Glu	Thr 130	Glu	Leu	Gly	Leu	Tyr 135	Lys	Val	Asn	Glu	Tyr 140	Val	Asp	Ala	Arg	
Asp 145	Thr	Asn	Met	Gly	Ala 150	Trp	Phe	Glu	Ala	Gln 155	Val	Val	Arg	Val	Thr 160	
Arg	Lys	Ala	Pro	Ser 165	Arg	Asp	Glu	Pro	Cys 170	Ser	Ser	Thr	Ser	Arg 175	Pro	
Ala	Leu	Glu	Glu 180	Asp	Val	Ile	Tyr	His 185	Val	Lys	Tyr	Asp	Asp 190	Tyr	Pro	
Glu	Asn	Gly 195	Val	Val	Gln	Met	Asn 200	Ser	Arg	Asp	Val	Arg 205	Ala	Arg	Ala	

Arg Thr Ile Ile Lys Trp Gln Asp Leu Glu Val Gly Gln Val Val Met 215 Leu Asn Tyr Asn Pro Asp Asn Pro Lys Glu Arg Gly Phe Trp Tyr Asp 230 235 Ala Glu Ile Ser Arg Lys Arg Glu Thr Arg Thr Ala Arg Glu Leu Tyr Ala Asn Val Val Leu Gly Asp Asp Ser Leu Asn Asp Cys Arg Ile Ile Phe Val Asp Glu Val Phe Lys Ile Glu Arg Pro Gly Glu Gly Ser Pro Met Val Asp Asn Pro Met Arg Arg Lys Ser Gly Pro Ser Cys Lys His Cys Lys Asp Asp Val Asn Arg Leu Cys Arg Val Cys Ala Cys His Leu Cys Gly Gly Arg Gln Asp Pro Asp Lys Gln Leu Met Cys Asp Glu Cys 330 Asp Met Ala Phe His Ile Tyr Cys Leu Asp Pro Pro Leu Ser Ser Val Pro Ser Glu Asp Glu Trp Tyr Cys Pro Glu Cys Arg Asn Asp Ala Ser Glu Val Val Leu Ala Gly Glu Arg Leu Arg Glu Ser Lys Lys Asn Ala Lys Met Ala Ser Ala Thr Ser Ser Gln Arg Asp Trp Gly Lys Gly Met Ala Cys Val Gly Arg Thr Lys Glu Cys Thr Ile Val Pro Ser Asn His Tyr Gly Pro Ile Pro Gly Ile Pro Val Gly Thr Met Trp Arg Phe 425 Arg Val Gln Val Ser Glu Ser Gly Val His Arg Pro His Val Ala Gly Ile His Gly Arg Ser Asn Asp Gly Ser Tyr Ser Leu Val Leu Ala Gly 455 Gly Tyr Glu Asp Asp Val Asp His Gly Asn Phe Phe Thr Tyr Thr Gly 475 Ser Gly Gly Arg Asp Leu Ser Gly Asn Lys Arg Thr Ala Glu Gln Ser 490 Cys Asp Gln Lys Leu Thr Asn Thr Asn Arg Ala Leu Ala Leu Asn Cys

Phe Ala Pro Ile Asn Asp Gln Glu Gly Ala Glu Ala Lys Asp Trp Arg 520 Ser Gly Lys Pro Val Arg Val Val Arg Asn Val Lys Gly Lys Asn Ser Lys Tyr Ala Pro Ala Glu Gly Asn Arg Tyr Asp Gly Ile Tyr Lys Val Val Lys Tyr Trp Pro Glu Lys Gly Lys Ser Gly Phe Leu Val Trp 565 Arg Tyr Leu Leu Arg Arg Asp Asp Asp Glu Pro Gly Pro Trp Thr Lys Glu Gly Lys Asp Arg Ile Lys Lys Leu Gly Leu Thr Met Gln Tyr Pro Glu Gly Tyr Leu Glu Ala Leu Ala Asn Arg Glu Arg Glu Lys Glu Asn 615 Ser Lys Arg Glu Glu Glu Glu Gln Glu Gly Gly Phe Ala Ser Pro 630 Arg Thr Gly Lys Gly Lys Trp Lys Arg Lys Ser Ala Gly Gly Pro 650 Ser Arg Ala Gly Ser Pro Arg Arg Thr Ser Lys Lys Thr Lys Val Glu Pro Tyr Ser Leu Thr Ala Gln Gln Ser Ser Leu Ile Arg Glu Asp Lys Ser Asn Ala Lys Leu Trp Asn Glu Val Leu Ala Ser Leu Lys Asp Arg 695 Pro Ala Ser Gly Ser Pro Phe Gln Leu Phe Leu Ser Lys Val Glu Glu 715 Thr Phe Gln Cys Ile Cys Cys Gln Glu Leu Val Phe Arg Pro Ile Thr Thr Val Cys Gln His Asn Val Cys Lys Asp Cys Leu Asp Arg Ser Phe Arg Ala Gln Val Phe Ser Cys Pro Ala Cys Arg Tyr Asp Leu Gly Arg Ser Tyr Ala Met Gln Val Asn Gln Pro Leu Gln Thr Val Leu Asn Gln Leu Phe Pro Gly Tyr Gly Asn Gly Arg

<210> 3 <211> 45

```
<212> DNA
<213> Homo sapiens
<220>
<221> CDS
<222> (1)..(45)
<400> 3
acc cac ggt gag gcg gcc gcg gag act gac agc agg cca gcc gat
                                                                   45
Thr His Gly Glu Ala Ala Ala Glu Thr Asp Ser Arg Pro Ala Asp
<210> 4
<211> 15
<212> PRT
<213> Homo sapiens
Thr His Gly Glu Ala Ala Ala Glu Thr Asp Ser Arg Pro Ala Asp
<210> 5
<211> 78
<212> DNA
<213> Homo sapiens
<220>
<221> CDS
<222> (1)..(78)
<400> 5
atg gtt gac aac ccc atg aga cgg aag agc ggg ccg tcc tgc aag cac
Met Val Asp Asn Pro Met Arg Arg Lys Ser Gly Pro Ser Cys Lys His
                                                          15
tgc aag gac gac gtg aac aga ctc tgc agc
                                                                   78
Cys Lys Asp Asp Val Asn Arg Leu Cys Ser
             20
<210> 6
<211> 26
<212> PRT
<213> Homo sapiens
<400> 6
Met Val Asp Asn Pro Met Arg Arg Lys Ser Gly Pro Ser Cys Lys His
Cys Lys Asp Asp Val Asn Arg Leu Cys Ser
```

20

<210> 7 <211> 525 <212> DNA <213> Homo sapiens														
<220> <221> CDS <222> (1)(522)														
<400> 7  cga gag aag gag aac agc aag agg gag gag														
ggc ttc gcg tcc ccc agg acg ggc aag ggc aag tgg aag cgg aag tcg 96 Gly Phe Ala Ser Pro Arg Thr Gly Lys Gly Lys Trp Lys Arg Lys Ser 20 25 30														
gca gga ggt ggc ccg agc agg gcc ggg tcc ccg cgc cgg aca tcc aag Ala Gly Gly Pro Ser Arg Ala Gly Ser Pro Arg Arg Thr Ser Lys 35 40 45	4													
aaa acc aag gtg gag ccc tac agt ctc acg gcc cag cag agc agc ctc Lys Thr Lys Val Glu Pro Tyr Ser Leu Thr Ala Gln Gln Ser Ser Leu 50 55 60	2													
atc aga gag gac aag agc aac gcc aag ctg tgg aat gag gtc ctg gcg  Ile Arg Glu Asp Lys Ser Asn Ala Lys Leu Trp Asn Glu Val Leu Ala  65 70 75 80	0													
tca ctc aag gac cgg ccg gcg agc ggc agc ccg ttc cag ttg ttc ctg Ser Leu Lys Asp Arg Pro Ala Ser Gly Ser Pro Phe Gln Leu Phe Leu 85 90 95	8													
agt aaa gtg gag gag acg ttc cag tgt atc tgc tgt cag gag ctg gtg Ser Lys Val Glu Glu Thr Phe Gln Cys Ile Cys Cys Gln Glu Leu Val 100 105 110	6													
ttc cgg ccc atc acg acc gtg tgc cag cac aac gtg tgc aag gac tgc 38 Phe Arg Pro Ile Thr Thr Val Cys Gln His Asn Val Cys Lys Asp Cys 115 120 125	4													
ctg gac aga tcc ttt cgg gca cag gtg ttc agc tgc cct gcc tgc cgc 43 Leu Asp Arg Ser Phe Arg Ala Gln Val Phe Ser Cys Pro Ala Cys Arg 130 135 140	2													
tac gac ctg ggc cgc agc tat gcc atg cag gtg aac cag cct ctg cag Tyr Asp Leu Gly Arg Ser Tyr Ala Met Gln Val Asn Gln Pro Leu Gln 145 150 155 160	0													
acc gtc ctc aac cag ctc ttc ccc ggc tac ggc aat ggc cgg tga  Thr Val Leu Asn Gln Leu Phe Pro Gly Tyr Gly Asn Gly Arg  165  170	5													

<210> 8 <211> 174 <212> PRT

<213> Homo sapiens

<400> 8

Arg Glu Lys Glu Asn Ser Lys Arg Glu Glu Glu Glu Gln Gln Glu Gly

1 5 10 15

Gly Phe Ala Ser Pro Arg Thr Gly Lys Gly Lys Trp Lys Arg Lys Ser 20 25 30

Ala Gly Gly Gly Pro Ser Arg Ala Gly Ser Pro Arg Arg Thr Ser Lys
35 40 45

Lys Thr Lys Val Glu Pro Tyr Ser Leu Thr Ala Gln Gln Ser Ser Leu 50 55 60

Ile Arg Glu Asp Lys Ser Asn Ala Lys Leu Trp Asn Glu Val Leu Ala 65 70 75 80

Ser Leu Lys Asp Arg Pro Ala Ser Gly Ser Pro Phe Gln Leu Phe Leu 85 90 95

Ser Lys Val Glu Glu Thr Phe Gln Cys Ile Cys Cys Gln Glu Leu Val

Phe Arg Pro Ile Thr Thr Val Cys Gln His Asn Val Cys Lys Asp Cys 115 120 125

Leu Asp Arg Ser Phe Arg Ala Gln Val Phe Ser Cys Pro Ala Cys Arg 130 135 140

Tyr Asp Leu Gly Arg Ser Tyr Ala Met Gln Val Asn Gln Pro Leu Gln 145 150 155 160

Thr Val Leu Asn Gln Leu Phe Pro Gly Tyr Gly Asn Gly Arg 165 170

<210> 9

<211> 324

<212> DNA

<213> Homo sapiens

<400> 9

atgtggatcc aggttcggac catggatggg aggcagaccc acacggtgga ctcgctgtcc 60 aggctgacca aggtggagga gctgaggcgg aagatccagg agctgttcca cgtggagcca 120 ggcctgcaga ggctgttcta cagggggcaaa cagatggagg acggccatac cctcttcgac 180 tacgaggtcc gcctgaatga caccatccag ctcctggtcc gccagagcct cgtgctccc 240 cacagcacca aggagcgga ctccgagctc tccgacaccg actccggctg ctgcctgggc 300 cagagtgagt cagacaagtc ctcc

<210> 10

<211> 495

<212> DNA

<213> Homo sapiens

```
<400> 10
 gaggacatgt gggatgagac ggaattgggg ctgtacaagg tcaatgagta cgtcgatgct 60
 cgggacacga acatgggggc gtggtttgag gcgcaggtgg tcagggtgac gcggaaggcc 120
 ccctcccggg acgagccctg cagctccacg tccaggccgg cgctggagga ggacgtcatt 180
 taccacgtga aatacgacga ctacccggag aacggcgtgg tccagatgaa ctccagggac 240
 gtccgagcgc gcgcccgcac catcatcaag tggcaggacc tggaggtggg ccaggtggtc 300
 atgeteaaet acaaeeeega caaeeeeaag gagegggget tetggtaega egeggagate 360
 tecaggaage gegagaceag gaeggegegg gaactetaeg ceaaegtggt getgggggat 420
 gattetetga acgaetgteg gateatette gtggaegaag tetteaagat tgageggeeg 480
 ggtgaaggga gcccc
 <210> 11
 <211> 915
 <212> DNA
 <213> Homo sapiens
 <400> 11
 gtctgcgcct gccacctgtg cgggggccgg caggaccccg acaagcagct catgtgcgat 60
 gagtgcgaca tggccttcca catctactgc ctggacccgc ccctcagcag tgttcccagc 120
gaggacgagt ggtactgccc tgagtgccgg aatgatgcca gcgaggtggt actggcggga 180
gagcggctga gagagagcaa gaagaatgcg aagatggcct cggccacatc gtcctcacag 240
 cgggactggg gcaagggcat ggcctgtgtg ggccgcacca aggaatgtac catcgtcccg 300
 tccaaccact acggacccat cccggggatc cccgtgggca ccatgtggcg gttccgagtc 360
 caggicageg agicgggigt ccateggeee caegiggeig geatecatgg eeggageaac 420
 gacggatcgt actccctagt cctggcgggg ggctatgagg atgatgtgga ccatgggaat 480
tttttcacat acacgggtag tggtggtcga gatctttccg gcaacaagag gaccgcggaa 540
cagtettgtg atcagaaact caccaacacc aacagggcgc tggctctcaa ctgctttgct 600
cccatcaatg accaagaagg ggccgaggcc aaggactggc ggtcggggaa gccggtcagg 660
gtggtgcgca atgtcaaggg tggcaagaat agcaagtacg cccccgctga gggcaaccgc 720
tacgatggca tctacaaggt tgtgaaatac tggcccgaga aggggaagtc cgggtttctc 780
gtgtggcgct accttctgcg gagggacgat gatgagcctg gcccttggac gaaggagggg 840
aaggaccgga tcaagaagct ggggctgacc atgcagtatc cagaaggcta cctggaagcc 900
ctggccaacc gagag
                                                                   915
<210> 12
<211> 1369
<212> DNA
<213> Homo sapiens
<400> 12
ggcagcgttt gccgagcggg cgctccgggt cgcacgcaag tccgcgcggg gtccgggcca 60
cgcacgcggt ttcatcgcca tccccagccg ggccaggcgc gcaggcagac aagctgttcg 120
cggcgaccgg agaggtgagc gggcgggccg ggtcggggtg ccagcccggg ccgggcgcac 180
ggggctcggg aactttgcaa aactttcccg cgcggccagc ccgggcgcac gcatgtcccg 240
cactetgice egggatecag ggeeteceet tecacetaae eetegggaat egtteeeegg 300
cacacatecg getggagecg ggaccagege tgegteeceg gageceggeg gggggtegag 360
cgcgccgggt gggggagggc ctggcgagcc gccggggagg atgtcaggct ccgcgcctgc 420
gegeggggeg cecegegatt caattgtege geeegageee gatttegege geeetgagtt 480
ccccgggagc atctgggcca atggggagcg agcgggcgg ggcggccggg tgctgcggag 540
ccaataagag gcggctcaag tgaagggggg cgggacttga cgagcggggg ccccctctgt 600
agtcccggcg gcgggggtgg gcgtgggctc gctggcgcga cccgcgcggg ccagtgggag 660
tgcgggaggg acgccgaggg tccagggttt ggaggggcgc gagctgccgg gggttggagg 720
tcgaggtgag tcgcggggcg cgcgcgctcg cgggtggccg ggacggggcg cggttaccat 780
ggccaccgcg gggcgggccc ggtcgcgcac gcgcgcgggg ggggccggca aggagggggg 840
gcgtgggcac cgagggtcc cggggtccgc ggatctcggg tggggttttt cccatttcag 900
tggcacttgg ttaagttccc ccgggacctt ctgaagttcc ggcccgcgct ggactttctg 960
```

```
ggattccctc ttccgtaaat aggaatccga ggaatgaatg aatcaatgaa tgaatgaata 1020
aacgaaccaa ctcgggccac ttggcccggg cctcctttct cctctggtcg tggggaagga 1080
 gggatgggtt ggaccttctg cttttctttc aattccctct tttcattctc cttcctcctc 1140
aatcttcaac acttggctag tcgttaatgc cttaagtgct taatttgttg tgtctggtcc 1200
tggccagggt ctggctgtac aggaggactg gaagggcatc ctgggagttt cctggtgtcc 1260 acaggccgga caaaagcaac cccgactcct tagagcatgg catggctcag aggtgctggt 1320
aaaactgatg ggggtttatg ctgtccctcc cctcagcgcc gacaccatg
<210> 13
<211> 36
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
       oligonucleotide
aattcgattg gttctgattg gttctt
                                                                       36
<210> 14
<211> 36
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 14
ctagaagaac caatcagaac caatcg
                                                                       36
<210> 15
<211> 38
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 15
aattcggggc ggggccgggg cgggcccggg gcggggct
                                                                      38
<210> 16
<211> 39
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
```

ctagageece geeeeggeee egeeeeggee eegeeeegg	39
<210> 17 <211> 21 <212> DNA	
<213> Artificial Sequence	
<pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide</pre>	
<400> 17	
agtcagggat tggctggtct g	21
<210> 18 <211> 21	•
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Synthetic oligonucleotide	
<400> 18	
cagaccagec aatecetgae t	. 21
<210> 19	
<211> 21	
<213> Artificial Sequence	•
<220>	
<pre>&lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide</pre>	
<400> 19 .	
aagctacgat tggttcttct g	21
·	
<210> 20	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic oligonucleotide	•
<400> 20	
cagaagaacc aatcgtagct t	21
<210> 21 <211> 38	

<pre>&lt;210&gt; 23 &lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>	<212>		
<pre>&lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide  &lt;400&gt; 21     ataaaggcaa gctacgattg gttcttctgg acggagac</pre>	<213>	Artificial Sequence	
oligonucleotide  <400> 21 ataaaggcaa gctacgattg gttcttctgg acggagac 38  <210> 22 <211> 39 <212> DNA <213> Artificial Sequence  <220> <223 Description of Artificial Sequence: Synthetic oligonucleotide  <400> 22 gtctccgtcc agaagaacca atcgtagctt gccttttat 39  <210> 23 <211> 39 <2112 DNA <213> Artificial Sequence  <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 23 gaattcgagg gtaaagggc ggggttgagg cagatgcca 39  <210> 24 <211> 38 <212> DNA <211> Artificial Sequence  <220> <2210> 24 <211> 38 <212> DNA <213> Artificial Sequence  <220> <2210> DNA <213> Artificial Sequence  <220> <2210> DNA <2213	<220>		
ataaaggcaa gctacgattg gttcttctgg acggagac 38  <210> 22 <211> 39 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 22 gtctccgtcc agaagaacca atcgtagctt gccttttat 39 <210> 23 <211> 39 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 23 gaattcgagg gtaaagggc ggggttgagg cagatgcca 39  <210> 24 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 24 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 24 <2110	<223>		
<pre>&lt;210&gt; 22 &lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223    Description of Artificial Sequence: Synthetic oligonucleotide </pre> <pre>&lt;400&gt; 22 gtctccgtcc agaagaacca atcgtagctt gccttttat</pre>			
<pre>&lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>	ataaag	gcaa gctacgattg gttcttctgg acggagac	38
<pre>&lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>			
<pre>&lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>	<210>	22 .	
<pre>&lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>			
<pre>&lt;213&gt; Artificial Sequence &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide &lt;400&gt; 22 gtctccgtcc agaagaacca atcgtagctt gccttttat</pre>			
<pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide  &lt;400&gt; 22 gtctccgtcc agaagaacca atcgtagctt gccttttat</pre>			
<pre>&lt;223&gt; Description of Artificial Sequence: Synthetic</pre>	12237	· · · · · · · · · · · · · · · · · · ·	
oligonucleotide  <400> 22 gtctccgtcc agaagaacca atcgtagctt gccttttat 39  <210> 23 <211> 39 <212> DNA <213> Artificial Sequence  <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 23 gaattcgagg gtaaaggggc ggggttgagg cagatgcca 39  <210> 24 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <220> coligonucleotide  <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24	<220>		
gtctccgtcc agaagaacca atcgtagctt gccttttat  210> 23  <211> 39  <212> DNA  <213> Artificial Sequence  <220>  <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 23  gaattcgagg gtaaaggggc ggggttgagg cagatgcca  39  <210> 24  <211> 38  <212> DNA  <213> Artificial Sequence  <220>  <220>  <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24  <211> 38  <212> DNA  <213> Artificial Sequence  <220>  <220>  <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24	<223>		
<pre>&lt;210&gt; 23 &lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic oligonucleotide &lt;400&gt; 23 gaattcgagg gtaaaggggc ggggttgagg cagatgcca 39 &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence &lt;220&gt; &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic oligonucleotide</pre>	<400>	22	
<pre>&lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>	gtctc	cgtcc agaagaacca atcgtagctt gccttttat	39
<pre>&lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>			
<pre>&lt;211&gt; 39 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence </pre> <pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic</pre>	010		
<pre>&lt;212&gt; DNA &lt;213&gt; Artificial Sequence  &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic oligonucleotide  &lt;400&gt; 23</pre>			
<pre>&lt;213&gt; Artificial Sequence &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide &lt;400&gt; 23 gaattcgagg gtaaaggggc ggggttgagg cagatgcca 39 &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence &lt;220&gt; &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide &lt;400&gt; 24</pre>			
<pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide  &lt;400&gt; 23 gaattcgagg gtaaaggggc ggggttgagg cagatgcca  &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence  &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide  &lt;400&gt; 24</pre>			
<pre>&lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide  &lt;400&gt; 23 gaattcgagg gtaaaggggc ggggttgagg cagatgcca 39  &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide &lt;400&gt; 24</pre>	<213>	Artificial Sequence	
<pre>&lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide  &lt;400&gt; 23 gaattcgagg gtaaaggggc ggggttgagg cagatgcca 39  &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic     oligonucleotide &lt;400&gt; 24</pre>	<220×	• •	
oligonucleotide  <400> 23 gaattcgagg gtaaagggc ggggttgagg cagatgcca 39  <210> 24 <211> 38 <212> DNA <213> Artificial Sequence  <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24		Description of Artificial Sequence: Synthetic	
<pre>gaattcgagg gtaaagggc ggggttgagg cagatgcca  &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence  &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic oligonucleotide &lt;400&gt; 24</pre>			
<pre>gaattcgagg gtaaagggc ggggttgagg cagatgcca  &lt;210&gt; 24 &lt;211&gt; 38 &lt;212&gt; DNA &lt;213&gt; Artificial Sequence  &lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic oligonucleotide &lt;400&gt; 24</pre>			
<210> 24 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 24		•	
<211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 24	gaatto	cgagg gtaaaggggc ggggttgagg cagatgcca	39
<211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 24			
<212> DNA <213> Artificial Sequence  <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24	<210>	24	
<213> Artificial Sequence  <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24	<211>	38	
<220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24	<212>	DNA .	
<220> <223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24	<213>	Artificial Sequence	
<223> Description of Artificial Sequence: Synthetic oligonucleotide  <400> 24		•	
oligonucleotide <400> 24			
	<223>		
tggcatctgc ctcaaccccq cccttaccc tcqaattc 38	<400>	24	
••	tggcat	ctgc ctcaaccccg ccccttaccc tcgaattc	38